

IN THE CLAIMS:

1. (Currently Amended) A device for molding objects of plastic material, ~~the device comprising which comprises:~~

a) an injection mold including two half-molds defining in a closed position, a plurality of injection cavities corresponding to ~~[[said]] the objects, wherein said half-molds undergo a translating ;~~

b) means for moving said half-molds in reciprocal motion toward and away from each other, defining a closed position and an open position, respectively;

c) an extraction arm for removing objects from ~~[[the]]~~ said mold that is provided with ~~reversible~~ gripping elements for gripping ~~[[said]]~~ objects from said mold, ~~and that is and being~~ translatable between a first position inserted into the space between said half-molds when ~~the molds are~~ said mold is in an open position, and a second position outside ~~[[the]]~~ said half-molds;

d) a conditioning turret having two sides in opposing relation, each side including a group of conditioning cups with means for receiving and retaining ~~[[the]]~~ molded objects from said extraction arm, ~~[[the]]~~ said turret being supported for rotational movement ~~around~~ about an essentially horizontal axis, followed by vertical displacement from a first higher position under ~~[[the]]~~ said extraction arm, ~~[[and]]~~ to a second ~~lower~~ position relatively spaced from said extraction arm; the device including and

e) ~~an extraction table, the extraction table~~ positioned adjacent said second position of said conditioning turret and having associated therewith, gripping elements [[for]] positioned, configured and dimensioned for engaging and selectively extracting [[the]] objects from [[the]] said conditioning turret cups, the extraction table being positioned beneath said second lower position of the conditioning turret when said gripping elements of said extraction table are translated along a path generally perpendicular to said rotational axis of said turret.

2. (Previously Presented) The device of claim 1, wherein the reciprocal motion of the half-molds is along a vertical axis.

3. (Currently Amended) The device of claim 2, wherein [[the]] said reversible gripping elements of [[the]] said extraction arm constitute a are releasable and comprise guillotine-like [[device]] devices.

4. (Currently Amended) The device of claim 3, wherein the translational movement of [[the]] said extraction arm is horizontal.

5. (Currently Amended) The device of claim 4, wherein ~~the gripping elements of the extraction table are formed by~~ said extraction table includes a movable plate on the upper portion, said plate having slots in the surface of the table having thereof, which slots have teeth configured to grip the molded objects in [[the]] said cups of said turret, when said plate is translated along said path generally perpendicular to said rotational axis of said turret.

6. (Currently Amended) A ~~process~~ method for molding objects of plastic material using the device of claim 1, ~~the process~~ comprising the following steps:

a) injecting molten plastic material into [[a]] said mold formed by said two half-molds that define, in their closed position, [[a]] said plurality of injection cavities[[,]] to form the molded objects;

- b) solidifying the molded objects in [[the]] said mold to a predetermined degree of hardness that defines an injection cycle~~[[,]]~~;
- c) opening [[the]] said half-molds~~[[,]]~~ ;
- d) inserting [[the]] said extraction arm in the space between said half-molds~~[[,]]~~ ;
- e) extracting objects from [[the]] said half-molds using [[the]] said extraction arm~~[[,]]~~ ;
- f) transporting the objects to a position outside [[the]] said half-molds~~[[,]]~~ ;
- g) transferring the objects to said conditioning cups of ~~the cooling said conditioning turret provided with a plurality of conditioning cups for receiving the objects that are located on two sides positioned opposite each other, ;~~
- h) cooling the objects in said conditioning cups of said conditioning turret to a predetermined temperature~~[[,]]~~ ;
- i) rotating [[the]] said conditioning turret ~~around an~~ about said essentially horizontal axis ~~and vertically displacing the turret to a lower position, and ;~~
- j) vertically displacing said conditioning turret from said first higher position adjacent to said extraction arm, to a second lower position relatively spaced from said extraction arm; and
- k) ~~extracting~~ translating said gripping elements on said extraction table along said path generally perpendicular to said rotational axis of said turret to thereby grip the objects from [[the]] said conditioning cups using the gripping elements arranged on the extraction table.

7. (Currently Amended) The ~~process~~ method of claim 6, wherein the opening of [[the]] said half-molds is effected using a motion of relative reciprocal distancing.

8. (Currently Amended) The ~~process~~ method of claim 7, wherein the number of turret conditioning cups is a multiple of the number of injection cavities and wherein the duration of the cooling step (h) is a multiple of the duration of the injection molding cycle.

9. (Currently Amended) The ~~process~~ method of claim 8, wherein the step of extracting the objects from [[the]] said conditioning cups is performed by means of interference and frictional contact with the slots in the associated with said extraction table, said gripping elements being in the form of slots adapted to engage predetermined portions of the molded objects when said gripping elements of said extraction table are translated along said path adjacent said turret.

10. (Currently Amended) The ~~process~~ method of claim 9, wherein [[the]] said slots have teeth-like surface projections.

11. (Currently Amended) The ~~process~~ method of claim 10, wherein the objects are preforms and [[the]] said teeth-like surface projections are inserted between a ring situated close to [[the]] a neck of the preform and the end of [[the]] said respective cup in which the preform is retained.

12. (New) A device for molding objects of plastic material, which comprises:

- a) an injection mold including two half-molds defining in a closed position, a plurality of injection cavities corresponding to the objects, one of said half-molds being higher than said other half-mold;
- b) means for moving said half-molds in reciprocal motion toward and away from each other, defining a closed position and an open position, respectively;
- c) an extraction arm for removing objects from said upper half-mold, said extraction arm being provided with a plurality of releasable guillotine-like gripping elements for gripping the objects, and being translatable between a first position inserted into the space

between said half-molds when said mold is in an open position, and a second position outside said half-molds;

d) a conditioning turret having two sides in opposing relation, each side including a group of conditioning cups with means for receiving the molded objects from said extraction arm, and retaining them in position, said turret including rows of conditioning cups for reception of the objects from said extraction arm, said conditioning turret further being supported for rotational movement about an essentially horizontal axis, followed by vertical displacement from a first higher position under said extraction arm, to a second lower position relatively spaced from said extraction arm; and

e) an extraction table positioned beneath said second lower position of said conditioning turret and supporting a horizontally movable plate having a plurality of slots therein, said plate being adjacent to said conditioning turret, said slots defining teeth dimensioned, configured and positioned for engaging and selectively gripping and extracting molded objects from said conditioning turret cups when said plate is translated along an essentially horizontal path generally perpendicular to said rotational axis of said turret.

13. (New) The device of claim 12, wherein the reciprocal motion of said half-molds is along a vertical axis.

14. (New) The device of claim 13, wherein the translational movement of said extraction arm is horizontal.

15. (New) A device for molding objects of plastic material, which comprises:

a) an injection mold including two half-molds defining in a closed position, a plurality of injection cavities corresponding to the objects;

b) means for moving said half-molds in reciprocal motion toward and away from each other, defining a closed position and an open position, respectively;

c) an extraction arm for removing objects from said mold, said extraction arm being provided with releasable gripping elements for gripping the objects from said mold, and being translatable between a first position inserted into the space between said half-molds when said mold is in an open position, and a second position outside said half-molds;

d) a conditioning turret having two sides in opposing relation, each side including a group of conditioning cups with means for receiving and retaining the molded objects from said extraction arm, said turret being supported for rotational movement about an axis of rotation, followed by linear displacement from a first position adjacent said extraction arm, to a second position spaced from said extraction arm; and

e) an extraction table positioned adjacent said second position of said conditioning turret and having gripping elements dimensioned, configured and positioned for engaging and selectively extracting selective preform objects from said conditioning turret cups when said gripping elements of said extraction table are translated along a path generally perpendicular to said rotational axis of said turret.

16. (New) The device of claim 15, wherein the reciprocal motion of the half-molds is along a vertical axis.

17. (New) The device of claim 16, wherein the translational movement of said extraction arm is horizontal.

18. (New) The device of claim 17, wherein said rotational axis of said conditioning turret is horizontal, and said first position of said conditioning turret is higher than said second position, and said linear displacement of said conditioning turret is vertical.

19. (New) The device of claim 18, wherein said path of said gripping elements of said extraction table is horizontal.

20. (New) The device of claim 19, wherein said gripping elements of said extraction table are provided by a movable plate positioned on said extraction table.

21. (New) A device for molding objects of plastic material, which comprises:

- a) an injection mold including two half-molds defining in a closed position, a plurality of injection cavities corresponding to the objects;
- b) means for moving said half-molds in reciprocal motion toward and away from each other, defining a closed position and an open position, respectively;
- c) an extraction arm for removing objects from said mold that is provided with gripping elements for gripping objects from said mold, and being translatable between a first position inserted into the space between said half-molds when said mold is in an open position, and a second position outside said half-molds;
- d) a conditioning turret having two sides in opposing relation, each side including a group of conditioning cups with means for receiving and retaining molded objects from said extraction arm, said turret being supported for rotational movement about a rotational axis, followed by displacement from a first position adjacent said extraction arm, to a second position relatively spaced from said extraction arm; and
- e) an extraction table positioned adjacent said second position of said conditioning turret and having associated therewith, gripping elements positioned, configured and dimensioned for engaging and selectively extracting objects from said conditioning turret cups when said gripping elements of said extraction table are translated along a path adjacent to, and relative to said turret.

22. (New) A method for molding objects of plastic material using the device of claim 21, comprising the following steps:

a) injecting molten plastic material into said mold formed by said two half-molds that define, in their closed position, said plurality of injection cavities to form the molded objects;

b) solidifying the molded objects in said mold to a predetermined degree of hardness that defines an injection cycle;

c) opening said half-molds;

d) inserting said extraction arm in the space between said half-molds;

e) extracting objects from said half-molds using said extraction arm;

f) transporting the objects to a position outside said half-molds;

g) transferring the objects to said conditioning cups of said conditioning turret;

h) cooling the objects in said conditioning cups of said conditioning turret to a predetermined temperature;

i) rotating said conditioning turret about said turret rotational axis;

j) displacing said conditioning turret from said first position adjacent to said extraction arm along a path generally perpendicular to said rotational axis, to a second position relatively spaced from said extraction arm and adjacent said extraction table; and

k) translating said gripping elements associated with said extraction table along said path adjacent to, and relative to said turret to thereby grip the objects from said conditioning cups.